Eastern Montana Fire Zone
Helicopter
Operations Supplement
2005

Bureau of Land Management
EMFZ Fire & Aviation
111 Garryowen Road
Miles City, Montana

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Red highlighted items are new entries for 2005 or points of emphasis

1. Mission/Policy

The purpose of this supplement is to provide operational guidance in accordance with all DOI policy, the BLM 9400 Manual, the Standards for Fire and Aviation Operations and the Interagency Helicopter Operations Guide, the Interagency Aerial Ignition Guide, the BLM Wild Horse and Burro Aviation Management Handbook, the Eastern Montana Fire Zone Aviation Operation Plan, the Montana/Dakotas BLM Aviation Management Plan and the BLM National Aviation Plan.

2. Objectives

- Provide aviation management expertise to ensure the safe and efficient use of exclusive use contracted and call when needed (CWN) or aircraft rental agreement (ARA) helicopters.
- Increase rapid initial attack capabilities.
- Provide guidelines and checklists for the safe, daily operations of helibase and helispot operations.
- Provide guidance and support in the use of helicopters.

3. Organization

The exclusive use contract helicopter, unit organization consists of:

Zone FMO	David Overcast
Zone AFMO	Eric Lepisto
Zone AFMO	Vacant
Unit Aviation Manager	Greg Loper
Helicopter Crew Supervisor	Conan Donnelly
Asst. Helicopter Supervisor	Tom Cline
Lead Crewmember	Alicia Tanrath
Lead Crewmember	**Detailer
6 Seasonal Crewmembers	

** The EMFZ may utilize detail personnel as needed to supplement the exclusive use or call when needed aircraft.

4. Contracting

A 70 day exclusive use contract will be utilized for procuring the use of a light helicopter for initial attack operations within the Eastern Montana Fire Zone (EMFZ). (See, National Business Center- Aviation Management - Contract for Aircraft Services). The contractor will provide the appropriate size bucket for the aircraft and a fuel truck for mobilization of the aircraft. The contractor will provide all safety equipment needed to support the aircraft and ground crew. The pilot will be OAS carded for fire operations. A qualified Helicopter Manager will be in place prior to the arrival of the aircraft to the incident or project to ensure contract policies and procedures are adhered to during the contracted period. The contract may be modified should the agency requirements change. Request for changes will be submitted to OAS 30 days after completion of the normal contract period. CWN or ARA contracts may also be utilized to procure additional helicopters as needed.

4.1 Minimum aircraft requirements are:

- Turbine powered aircraft with a capacity of four passengers
- Range of 240 nautical miles with full fuel load at cruise speed
- Internal payload HIGE of 700 pounds
- ELT Transmitter
- VHF-AM 9600 with CTCSS tone encoder
- VHF-FM aeronautical transceiver
- GPS navigational system
- External bucket with long line
- Survival kit

4.2 Pre-use requirements and inspection:

- Upon arrival of the aircraft a pre-use inspection will be conducted prior to being placed in service
- Check pilot, aircraft and support equipment cards for validation
- Establish pilot flight time and duty day logs
- Ensure flight time verification forms are signed by the pilot
- Begin aircraft contract daily diary
- Review Zone aviation, Zone helicopter and helibase operational plans and procedures with pilot and crew
- Review Zone and State aviation orientation guides with pilot and crew

4.3 Exclusive Use Contract Administration:

- The Contracting Officer is a Contract Specialist from the Division of Acquisition- National Business Center-Aviation Management. The CO is the appointed government official with authority to award, modify, resolve disputes, and terminate the contract.
- The Contracting Officer's Technical Representative is the West Area Director-National Business Center-Aviation Management. The COTR is authorized by the CO to take any or all actionsto assure compliance with the technical portions of the contract. The COTR will conduct all requested or required inspections.
- The Contracting Officer's Representative is the Montana/Dakotas BLM State Aviation Manager. The COR is authorized by the CO to confirm the contract start date and the daily schedule, issue government property (if any) and assure the contractor performs in accordance with the contract.
- The Primary Project Inspector is the EMFZ - BLM Unit Aviation Manager. The PPI is authorized by the COR to conduct pre-use inspections, order aircraft services, secure compliance with all contract provisions and specifications, record and agree to availability and flight times, approve authorized breaks, suspend operations and complete contractor evaluations at the end of the assignment.
- The Field Project Inspectors are the EMFZ - BLM and detailer Helicopter Managers. The FPIs are authorized by the PPI to perform all of the above PPI duties on a daily basis and to immediately notify the PPI of any unavailability, incidents, malfunctions, hazards or accidents.

4.4 Procurement/Ordering

- By interagency agreement for tactical mission assignments both DOI-OAS Aircraft Rental Agreements and Forest Service Call-When-Needed contracts may be utilized within the zone. Land status and operational control shall determine contract selection for aircraft with both contracts. For non-fire resource assignments ordered by Miles City Dispatch, all aircraft shall utilize a DOI-OAS contract.
- Type III helicopters within the geographic area may be ordered direct by Miles City Dispatch. Type I and II helicopters shall be ordered through the geographic coordination center.

4.5 Aircraft/Flight Use Reports

- Submission of OAS 23/FS 122 forms will be dispensed and filed by invoice tracking number. All aircraft will be issued separate books with the N number written on the consecutive numbered book. The yellow copies will remain in the books to act as an official file. Each book will have dates and numerical reference that will correspond with OAS verification sheets. Billee Code information is included in the Montana/Dakotas Aviation Orientation Guide. The Unit Aviation Manager will be provided copies of all flight invoices.

- The OAS 23/FS 122s forms are to be completed daily by the pilot in command and Helicopter Manager. The OAS 23's/FS 122s will be submitted for vendor payment on the 1st and 15th of each month or termination of assignment. The Unit Aviation Manager or designee will review and authorize flight payment documents as outlined in the EMFZ Aviation Operation Plan.

4.6 Daily Diaries

- The contract daily diaries will be completed by the Field Project Inspectors. Daily diaries will be submitted to the Unit Aviation Manager on the 1st and 15th of each month or upon termination of assignment. Daily diaries will be reviewed by the UAM and forwarded on to the COR and CO.

4.7 Daily Aircraft Cost Summary Database

- All associated aircraft costs will be forwarded to the State Office daily for entry into the cost summary database.

5. Zone Helibase Network

The EMFZ will provide electricity, water, hangar space, pilot ready room, office space and a training room for the contracted helicopter at Fort Howes Fire Station. An additional hangar space and pilot ready room is available for helicopters temporarily based out of the Miles City Air Base at Frank Wiley Field. Jet A fuel is available through the airport FBO. Aircraft assigned to the Billings helibase will utilize the heavy tanker facilities located at Billings Logan International airport for pilot and crew members. Fuel is supplied by Lynch Flying Service located at the Billings airport. All other helibase locations are considered remote and will require fuel truck support within two hours of the aircraft's arrival. Each fire station will have a designated helibase at an airport with the exception of the Camp Crook Fire Station. The helibase locations are identified as follows:

5.1 **Billings Helibase (Airport)**

Fuel	Pad Type	Elevation	Location
100 LL Jet A	Asphalt	3649	45 48 30 108 32 37.8

5.2 Ekalaka Helibase (Airport)

Fuel	Pad Type	Elevation	Location
None	Asphalt	3503	45 52 40.8 104 32 15

5.3 **Fort Howes Helibase**

Fuel	Pad Type	Elevation	Location
None	(3) Concrete	3300	45 18 12 106 09 09

5.4 **Jordan Helibase (Airport)**

Fuel	Pad Type	Elevation	Location
None	Grass	2662	47 20 00 106 56 02.4

5.5 Camp Crook Helibase

Fuel	Pad Type	Elevation	Location
None	Grass	2800	45 32 24 103 59 18

5.6 **Miles City Helibase (Airport)**

Fuel	Pad Type	Elevation	Location
100 LL Jet A	Asphalt	2628	46 25 40.8 105 53 10.8

5.7 **Bridger Helibase (Airport)**

Fuel	Pad Type	Elevation	Location
None	Grass	3220	45 17 30 108 55 32.4

- The Helicopter Crew Supervisor, along with the respective Fire Operations Supervisor, will conduct a site inspection of all helibases to ensure that each base meets the required standards of the IHOG. Any discrepancies will be noted and given to each Station Manager for corrective action. A copy of inspections findings and corrective actions will be sent to the Unit Aviation Manager for review, and filed in the Zone aviation safety records.

- In addition to the helibases listed above there are several locations that have been used as helibases in the past by incident management teams. These locations are listed below:

Helibase	Descriptive Location	Lat and Long (dms)
St Labre	Ashland/North end of CNF	45 36 19 by 106 16 19
Moorehead	Powder River near WY	45 03 08 by 105 53 01
Tobin Fire	Highway 212 East of Ashland	45 33 43 by 105 59 30
Diamond Butte	Taylor Cr. Road South of DB	45 14 15 by 105 59 31
Pine Grove	Missouri Breaks	47 31 41 by 107 31 41
Brussett	Missouri Breaks	47 25 03 by 107 14 43
Kraft Springs	South end of Long Pines	45 32 37 by 104 05 09

6. Helicopter Utilization

The above listed network consists of a permanent base located at Fort Howes Fire Station south of Ashland, Montana. The helibase is self-sufficient as a helitack operation in support of the EMFZ and the Custer National Forest, according to BLM and USFS suppression exchange agreement. The helicopter will be based at the Fort Howes Fire Station as a primary initial attack resource. The Zone Duty Officer or Fire Management Officer (FMO) may utilize the helicopter across the Zone. That decision will be based on current fire activity and resources available at the time of the request. This network is designed to be an effective tool that can be utilized by all interagency helicopter operations within or adjacent to the EMFZ. Agencies adjoining the EMFZ are the Montana Department of Natural Resources, BIA-Northern Cheyenne Agency, BIA-Crow Agency, US Fish and Wildlife Service, USDA Forest Service, and National Park Service.

7. Ground Operations

- A qualified Helicopter Manager will be assigned to all helicopter operations within the EMFZ.
- The Helicopter Crew Supervisor will set up and prepare the designated helibase and selected helispots within their initial attack areas.

- Only the Helicopter Manager and authorized personnel will be allowed on the deck area during helicopter operations within the Zone. Vehicle access to the deck will be controlled by the Helibase Manager.
- A standard helitack module will be dispatched with the helicopter for all initial attack requests within the Zone.
- Only the vendor's authorized ground personnel will be allowed to be around the aircraft during refueling.
- Only ICS qualified helitack personnel will be allowed to conduct ground hookup and sling-load operations.

8. Hangar Facilities

The BLM leases hangar space from the City of Miles City at the Miles City Airport and USFS at the Fort Howes Helibase. These facilities are provided as protection from severe weather events and for scheduled maintenance. Priorities for limited hangar space will be provided to government-owned aircraft first, exclusive contract aircraft second, and CWN/ARA aircraft third. The on-site government representative (Helicopter Manager) shall authorize and coordinate parking of all aircraft within these facilities on a daily basis. Ground handling of private aircraft shall be conducted only by employees of that vendor, unless prior documented authorization is in place.

9. Briefings

All incoming Helicopter Managers and pilots shall receive an initial briefing from the Unit Aviation Manager or designee as outlined in the EMFZ Aviation Orientation Guide. Detailer Helicopter Managers should be self-supporting and arrive with their own manager kits and flight gear. Managers shall provide pilots and crew daily briefings as outlined in the EMFZ Aviation Orientation Guide and the procedures portion of this supplement.

10. Staging/Parking

The Miles City Airport is the primary staging area for all helicopters assigned to the EMFZ. Aircraft assigned to Miles City shall park as requested by the Ramp Manager using the assigned frequency. Transient aircraft are under the authority of the FAA at an uncontrolled airport and may park at their discretion. The Fort Howes Helibase is the designated base for the exclusive use contract helicopter; two additional helicopters can operate out of this location. Aircraft assigned to Fort Howes shall request parking assignments from the Helibase manager. See appendix for parking diagrams. Helicopters may also be assigned to an incident helibase or alternate airport.

11. Pre-season Readiness

- Office trailer shall annually be reactivated with phone and fax line hookup service and equipment installed prior to June 1 as per appendix E of the IHOG.
- Helibase inspections shall be conducted prior to June 1st annually.
- An inventory of all helitack equipment will be updated prior to June 1st annually
- Deck areas will be mowed and cleaned of any foreign objects that would be hazardous to aircraft rotors or engines intakes.
- Pad areas will be clearly marked and a visible wind sock in place.
- Helibase traffic pattern should be posted for pilot information.
- HazMat waste kit and appropriate fire extinguishers will be placed adjacent to refueling area for easy access by personnel.
- Helibases will be activated according to current lightning and fire frequency patterns at the beginning of the normal fire season.
- The Zone helitack support truck will be operationally ready prior to the arrival of the contracted aircraft.
- Prior to base activation, a review of the memorandum of understandings (MOUs) for establishing the helibases is required by the Unit Aviation Manager.
- All Zone Helicopter Managers shall maintain an updated Helicopter Manager kit as per 9-41 of the IHOG including a disposable camera.
- All Zone helicopter personnel shall adhere to the NWCG 310-1 and the training and experience requirements matrix on pages 12-8 and 12-9 of the Interagency Standards for Fire and Aviation and the Interagency Aerial Ignition Guide.

12. Aircraft Operating Procedures

- Pilot and ground crew will perform pre-flight and ground checks on aircraft at the start of each duty day to ensure flight readiness.
- Aircraft unavailability of any kind shall be reported to the Unit Aviation Manager or designee immediately. Passengers are prohibited aboard the aircraft until it is returned to service by the COTR.
- Any kind of damage to the aircraft shall be reported immediately to the Unit Aviation Manager or designee.
- The Helicopter Manager has operation control of the mission. The pilot in command has final authority for safety of the aircraft.
- Unnecessary flight profiles ie: auto rotations, sharp- abrupt turns or changes in altitude are prohibited. Deviations shall be reported immediately to the Unit Aviation Manager.

- Helicopter Manager will conduct a daily pre-operations briefing to include:
  a. Map of last 24-hour lightning occurrences
  b. Forecasted weather for next 24-hour period
  c. Expected fire behavior and fire activity if applicable
  d. Changes in deck, flight following and tactical radio frequencies
  e. Conduct a pre-flight safety briefing
  f. Review of days Operations
  g. Expected airspace activity

- The assigned Helicopter Manger will notify the pilot of a flight request and provide the required dispatch form as soon as possible prior to takeoff.
- Pilot and crew will report to the deck area to prepare for launch.
- Only the pilot and helitack crew will be allowed on the deck area during any loading or aircraft operations.
- The pilot will complete the required aircraft functional checks and run up procedures. The pilot will establish contact with the Helicopter Manager/Deck Coordinator on the deck/ramp frequency.
- After lift-off the pilot, or Helicopter Manager will establish contact with the Zone Aviation Dispatcher or assigned dispatcher for flight following, giving lift-off time, fuel on board, souls on board, heading and estimated time of arrival (ETA) to the assigned mission.
- Manager/Pilot will establish contact with the Incident Commander (I.C.) or ground forces on an assigned tactical or local frequency. Initial contact with the Air Attack or IC shall adhere to the parameters of the Fire Traffic Area (FTA).
- If contact cannot be made, the pilot/manager will contact the Zone dispatch for further instructions.
- Upon completion of the mission, the pilot/manager will establish contact with Zone dispatch for flight following during the return to home base or the assigned helibase.
- Approximately 5 minutes from base, the pilot will call in location and then go into a sterile cockpit mode until the helicopter is on the deck.
- After shutdown the pilot will give the assigned Helicopter Manager the Hobbs meter reading. The pilot will debrief the manager on any concerns or complaints during the mission.
- Pilots, who have not flown during the previous duty cycle (12days), shall be authorized a long line proficiency flight at the discretion of the Duty Officer.
- Ground personnel with radios shall be used at dip sites and for external load missions whenever practical.

13. Dip Site Guidelines

Due to the lack of natural dip sites on public land in southeastern Montana the following guidelines are used by the EMFZ.

- Obtain permission from the landowner when utilizing a dip site on private land.
- Order 5,000 or 6,000 gallon pumpkins and the district water tender as soon as possible to avoid depleting the limited water supply.

14. First Time Landing Guidelines

Based on some of the historical accidents associated with “First Time Helicopter Landings”, it is incumbent upon helicopter managers to properly apply sound risk management principles when planning for initial utilization of unimproved landing sites. The EMFZ shall adhere to the direction from the BLM-National Aviation Office and IHOG Chapter 8 by having a qualified Helicopter Manager on board the aircraft for all first time landings at unimproved sites.

Factors to consider when planning for the initial use of an unimproved landing site;

- The load calculation. Load calculations are mathematical computations designed to provide reasonable assurance that a specific helicopter, under optimal conditions can successfully take-off and land with a given payload. Field conditions seldom are optimal. Performance planning should be based on less than optimal conditions for the first time into an unimproved landing site. Consider utilizing area “A” for load calculations computed for initial landings.
- Factors that will affect helicopter performance: sites that are sloped, covered in tall grass, topography that will induce wind direction, steep approaches, pinnacle LZ’s, saddle’s. All will reduce the potential maximum indicated allowable payload.
- Aircraft type. Depending on the model, some aircraft are more “forgiving” in situations where the site is less than ideal. Some are more likely to be very “unforgiving”.
- Pilots. The manager should assure the pilot that there is no issue with downloading the aircraft on the first attempt to land. Many pilots will not express their concern out of fear of not pleasing the customer.
- HIGE verses HOGE. What appears to be HIGE may actually be HOGE.

- Landing areas need to be sized up prior to landings. Rocks, trees or brush, and angle of slope are potential hazards to the landing surface. Full power- on skid landings are not authorized. Utilize an alternate site if any landing area conditions are marginal. Increased hiking distance to the fire should not be a primary factor for site selection.

- Sound risk management is improving an unimproved helispot as needed prior to the second trip to that site. Working around policy by sending an inexperienced crewmember on the second trip into an unimproved helispot is not sound risk management.

The knowledge base of the manager and the personal philosophy of the manager is the single most important factor in determining the success of an operation. If the manager has developed a through understanding of helicopter performance and limitations, has a cautious attitude and is willing to take a firm stance, the operation will be conducted in a manner that is conducive to success.

First time landings, based on load calculations developed in area “B” can be successfully executed, provided all environmental, platform and human elements are at their peak. As each element decays in one fashion or another, downloading is required. There are no hard and fast rules to follow. The best advice is to be very conservative when attempting to land in an area that the elements area unknown or not proven. When operating in an environment that contains many variables, erring on the side of safety with human life at stake, should be standard procedure. The minor increase in time, necessary to make two short trips into a site, and then working up the payload as the pilot becomes comfortable with the site, is a prudent and professional way to conduct business. It is also a method to minimize the risk to human life and maintain operational effectiveness.

15. Communications Procedures

Helicopters operating under the direction of the EMFZ will follow a frequency sequence plan. This plan is applicable to both tactical and resource work missions. The sequence of this plan works in reverse order when returning to helibase. Refer to chapter II of the EMFZ Aviation Orientation Guide.

Ramp/Deck Frequency -------- VHF AM – ------- RX and TX—122.900

- Use for aircraft-to- ground operations
- The exception is the Miles City Airbase utilizes the national Air Tanker ramp frequency : 123.975

National Flight Following Frequency---VHF FM --- RX and TX----168.650

- Use for aircraft-to-dispatch, 15 minute position checks

Air Guard Frequency--- VHF FM --- RX and TX---- 168.625

- Use in aircraft emergency situations or initial contact

DNRC Home Creek---------- VHF-FM -------- RX 151.175 and TX 151.475 tone 192.8

- Use for flight following during high fire activity below 1500 feet AGL

Refer to the Zone or MT/Dakotas Aviation Orientation Guide- frequency guide for zone repeater frequencies.

Tactical Air to Ground VHF-FM and tactical Air-to-Air VHF-AM (Victor) frequencies are renewed annually. Refer to the frequency zone map in the MT/Dakotas Aviation Orientation Guide.

MCD shall utilize the Airspace Boundary Plan when aircraft are within 5 nautical miles of neighboring jurisdictions. This ensures aircraft operating within a 10-mile zone are notified of other aircraft. If you do not hear from MCD when approaching a boundary, call and ask as well as calling in the blind on Air to Air (Victor).

When establishing remote helibases, sites should be chosen that have both cell phone and radio communication with MCD.

16. Special Safety Considerations

- In the event of an aircraft fire, notify the pilot immediately and clear aircraft until engine is shutdown. Ready the fire extinguisher and wait for directions from the pilot before attempting to extinguish the fire.
- Each helibase will have a crash/rescue plan posted.
- Security and fueling of the aircraft is a contractor responsibility. All fueling operations will be conducted in a secure area, without presenting a hazard to facilities or other aircraft, hot refueling is not allowed without an exemption from OAS.
- It is the Helicopter Manager's responsibility to ensure for the security and safety of the crew, deck and base area.
- When there are more than two tactical aircraft over a scene, aerial supervision (ATGS) is required.
- Overdue aircraft procedures (see the Zone Aviation Operation Plan). Miles City Interagency Dispatch maintains an Interagency Mishap Plan.

The NWCG Fire line Handbook, Chapter 5 Firefighting Safety, chapter 12 of the Red Book, and most all of the IHOG contains further safety considerations for helicopter operations. All Zone Helicopter Managers shall annually review the risk management portion of chapter 3 of the IHOG.

17. Aircraft Fuel Spills

All aspects of fueling are the responsibility of the contractor. Jet A fuel will be the only aviation fuel allowed on or around the deck refueling tanks or area. Fuel spills should be handled as such:

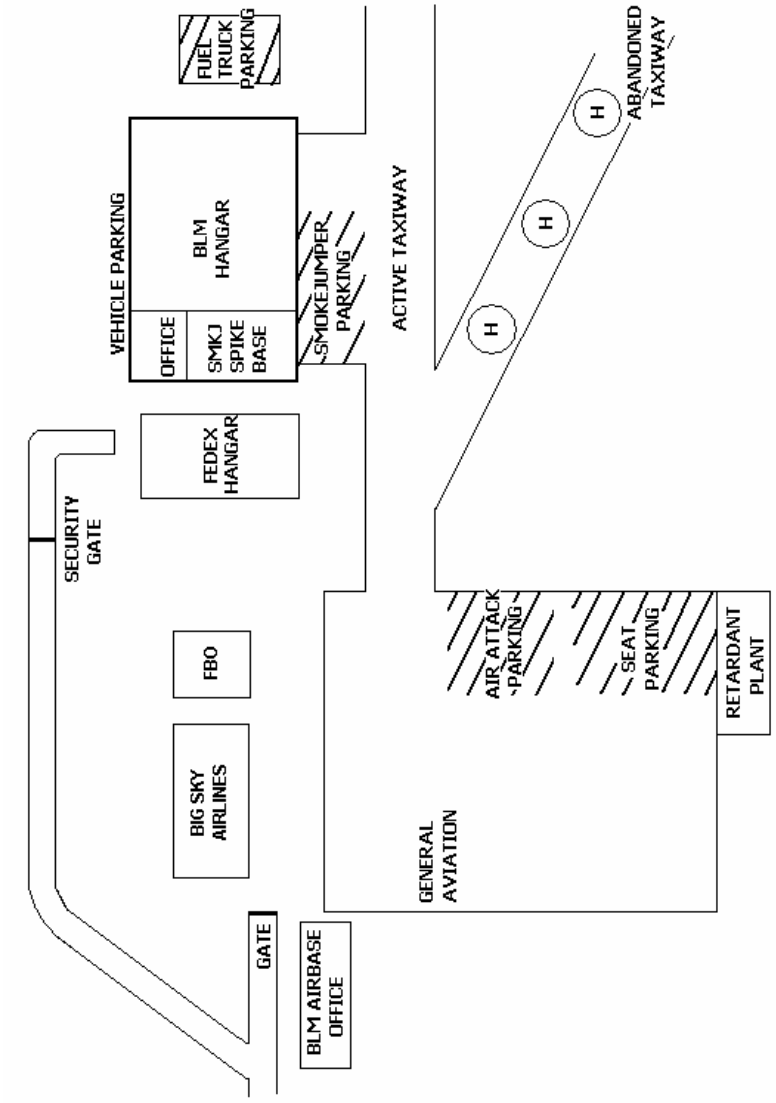
- Fuel spilling from aircraft or equipment will require that fueling operations will be suspended immediately. Any form of fuel spill will be reported to the Helicopter Manager, Aviation Manager or airport authority as soon as possible. A determination to suspend fueling operations will be made by one of the three individuals listed. Any spill presents a potential fire hazard and should be treated as such.
- Spills on concrete pads or asphalt should be cleaned up immediately with absorbent pads, oil dry, or sawdust. Washing spills away is prohibitive due to environmental concerns. Used absorbent materials should be placed in metal containers with close able lids. Large spills should be blanketed with foam to reduce fire hazard.
- Spills on gravel or soil based pads should be cleaned up immediately using the helibase spill kit or oil dry or saw dust. The soil around the spill needs to be checked for depth of contamination. Contaminated soil must be removed and properly disposed of according to Environmental Protection Agency (EPA) regulations.
- Fuel spills in excess of five gallons will be reported to Miles City Field Office HazMat Officer through the Zone dispatch by the Helicopter Manager.
- Spills in excess of 25 gallons must be reported to the Montana Department of Environmental Quality.

18. Summary

This document is supplement specific to the EMFZ Aviation Operation Plan. It shall be reviewed and updated annually by the zone helicopter organization staff, with completion prior to December 1st. The primary operational guide for helicopter operations within the zone is the Interagency Helicopter Operations Guide (IHOG). The principles of risk management in chapter 3 shall be applied to all aspects of helicopter operations within the EMFZ.

19. Helibase Parking Diagrams

19.1 Miles City Air Base



19.2 Fort Howes Helibase